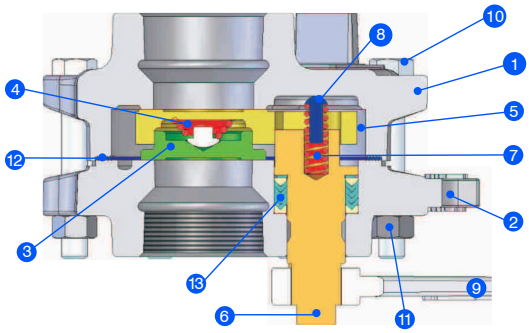
TECVAL

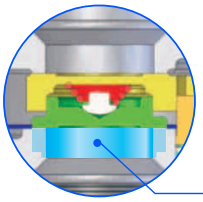
Somos Confiabilidad operacional

Series VP

Boiler Blowdown Valve

Construction Materials





Class 300
Seat Detail

Table 1

Item	Qy	Description	Material	
			Class 250	Class 300
1	1	Inlet body	ASTM A126 WCB	ASTM A216 WCB
2	1	Outlet body	ASTM A126 WCB	ASTM A216 WCB
3	1	Disc	AISI 420 Hard.	AISI 420 Hard.
3A	1	Seat	Outlet Body Material	AISI 420 Hard. (Insert)
4	1	Disc spring	AISI 302	AISI 302
5	1	Disc holder	ASTM A126 WCB	ASTM A126 WCB
6	1	Stem	Brass	AISI 304
7	1	Stem spring	AISI 302	AISI 302
8	1	Stem pivot	Carbon Steel	Carbon Steel
9	1	Handle	ASTM A536	ASTM A536
10	Var.	Body bolt	Steel Grade 2	Steel Grade 8
11	Var.	Body nut	Steel Grade 2	Steel Grade 2H
12	1	Body gasket	108AF Aramid Fiber	108AF Aramid Fiber
13	1	Stem packing	Silicone	Silicone

Operation

- Straight-through flow .
- Line pressure and heavy conical spring hold the disc firmly against the body seat, sealing off the flow .
- When operated, the disc slides across the outlet body seat, pushing harmful boiler scale away, wiping clean the precision lapped surface.

Pressure Ratings

Table 2 shows operating pressure ratings for each valve configuration.

See Table 4 to verify that selected valve meets criteria for your boiler application, according to current ASME Boiler Piping codes.

Table 2

	Primary Service Rating	Max. Blow-Off Service (psig)	Model	End Type	Body Material	Maximum Operating Pressures - Chart shows suggested Operating Pressure Limits (psig) for easy operation with standard lever. Longer levers are available for higher pressure upon request.				
						1"	1-1/4"	1-1/2"	2"	2-1/2"
Quick Opening	250	200	VP250-QO	SCR	Cast Iron	250	250	200	200	100
			VP250F -QO	FLG	Cast Iron	250	250	200	200	100
	300	485	VP300-QO	SCR	Steel	400	300	200	200	100
			VP300F -QO	FLG	Steel	400	300	200	200	100
Slow Opening	250	200	VP250-SO	SCR	Cast Iron	250	250	200	200	100
			VP250F -SO	FLG	Cast Iron	250	250	200	200	100
	300	485	VP300-SO	SCR	Steel	400	300	200	200	100
			VP300F -SO	FLG	Steel	400	300	200	200	100

- Applications acording to CRN, the Maximum allowed working pressure is 100 PSI.

ASME / ANSI Requirements for Boiler Blowdown

Boiler blowdown valve use is regulated by ASME Code for Power Piping B31.1 - 2004 (most current version). The following excerpts are provided for guidance only. The current codes in force, at the time of selection, should always be checked for complete details.

ASME Code for Pressure Piping
B31.1 – 2004 (Revision of ASME B31.1 – 2001)

Paragraph 122.1.7

The minimum pressure rating for all valves and fittings in steam, feedwater, blowoff and miscellaneous piping shall be equal to the pressure and temperature specified for the connected piping on the side that has the higher pressure, except that in no case shall the pressure be less than 100 psig, and for pressures not exceeding 100 psig in feedwater and blowoff service, the valves and fittings shall be equal at least to the requirements of the ASME standards for Class 125 cast iron or Class 150 steel.

Section C

(C.4) For all boilers [except electric steam boilers having a normal water content not exceeding 100 gal, traction purpose, and portable steam boilers; see (C.11) and (C.12) below] with allowable working pressure in excess of 100 psig, each bottom blowoff pipe shall have two slow-opening valves, or one quick-opening valve or cock, at the boiler nozzle followed by a slow-opening valve. All valves shall comply with the requirements of (C.5) and (C.6) below.

(C.5) When the value of P required by para. 122.1.4(A.1) does not exceed 250 psig, the valves or cocks shall be of bronze, cast iron, ductile iron or steel. The valves or cocks, if of cast iron, shall not exceed NPS 2-1/2 and shall meet the requirements of the applicable ASME standard for Class 250, as given in Table 126.1, and if of bronze, steel, or ductile iron construction, shall meet the requirements of the applicable standards.

(C.6) When the value of P required by para. 122.1.4(A.1) is higher than 250 psig, the valves or cocks shall be of steel construction equal at least to the requirements of Class 300 of the applicable ASME standard. The minimum pressure rating shall be equal to the value of P required by para. 122.1.4(A.1).

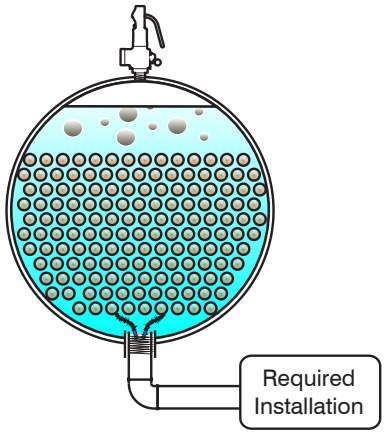
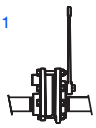
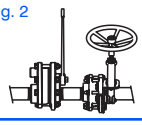
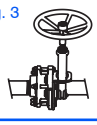
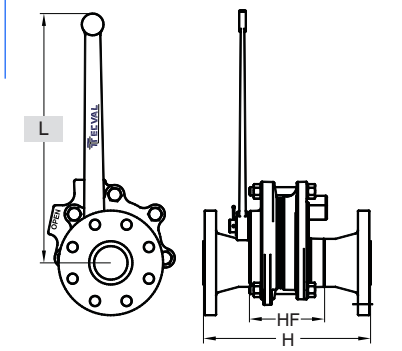


Table 4

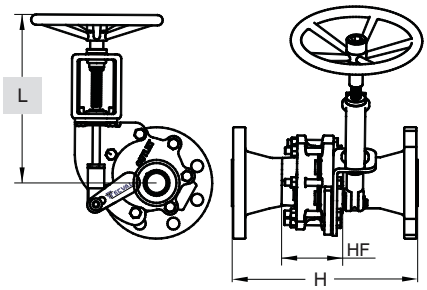
	Boiler Type	Piping Components Design Pressure P (psig)	Required Installation	Blowdown Valve Rating
Fig. 1 	For traction or portable boilers	< 250	Class 250	Fig. 1 or 3
		> 250	Class 300	
Fig. 2 	Boilers with: > 100 PSI MAWP > 100 Gal. Capacity	< 250	Class 250	Fig. 2
		> 250	Class 300	
Fig. 3 	Electric boilers, portable or traction boilers.	< 250	Class 250	Fig. 3
		> 250	Class 300	

Dimensions

Quick Opening - QO



Slow Opening - SO



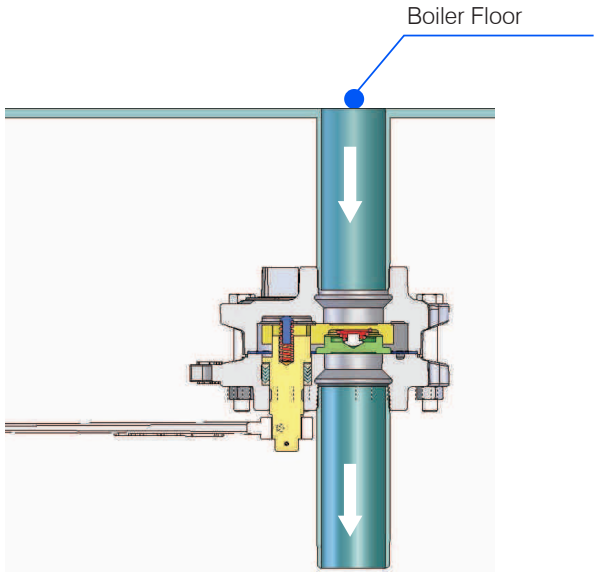
Dimensions (in) and Approximate Weights (lbs)

Table 3

Quick Opening - QO								
Sizes	HF (SCR)	Dimensions (in)		L	Weights (lbs)			
		H (FLG)			SCR		FLG	
		250#	300#		250#	300#	250#	300#
1"	3,6	7,5	7,9	12	13	18	24	20
1¼"	3,6	7,5	7,9	12	14	19	24	26
1½"	4,5	8,9	8,9	11,6	23	31	34	42
2"	4,6	9	9	12	28	34	44	46
2½"	5,2	10,5	12	23	45	49	69	72

Slow Opening - SO								
Dimensions (in)					Weights (lbs)			
HF (SCR)	H (FLG)		L		SCR		FLG	
	250#	300#	SHUT	OPEN	250#	300#	250#	
3,6	7,5	7,9	14,9	12,6	27	33	-	39
3,6	7,5	7,9	14,9	12,6	28	34	-	41
4,5	8,9	8,9	15,5	12,8	38	45	48	57
4,6	9	9	15,4	12,9	42	48	57	60
5,2	10,5	12	17,4	14,5	61	65	86	90

Typical Installation



Guidelines

- Install valve making sure the inlet side is as marked.
- Provide enough lever clearance with boiler body to ensure easy access and full open-close operation; check dimension L above.
- Install valve with either thread sealant or appropriate flange gaskets.

Ordering Code

VP — ☐ ☐ — ☐ — ☐

Class Rating	
Class	Code
250 #	250
300 #	300

Connections	
Type	Code
Threaded	T
Flanged	F

Operation	
Type	Code
Quick Opening	QO
Slow Opening	SO

Size	
NPT / Flanged	Code
1"	100
1-1/4"	125
1-1/2"	150
2"	200
2-1/2"	250

Spare Parts Ordering Codes

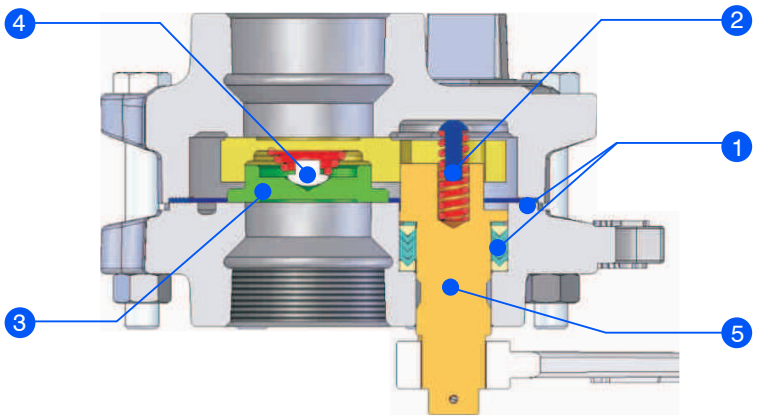


Table 5

Spare Parts Sets						
		1	2	3	4	5
Size	Class	Stem Packing & Body Gasket Set	Disc Spring Set	Stem Spring Set	Disc	Stem
1" & 1-1/4"	250	VP-SP-01-1	VP-SP-02-1	VP-SP-03-1	VP-SP-04-1	VP-SP-05-1
	300					VP-SP-05-2
1-1/2" & 2"	250	VP-SP-01-2	VP-SP-02-2	VP-SP-03-2	VP-SP-04-2	VP-SP-05-3
	300					VP-SP-05-4
2-1/2"	250	VP-SP-01-3	VP-SP-02-3	VP-SP-03-3	VP-SP-04-3	VP-SP-05-5
	300					VP-SP-05-6